

## 5.2 Public Benefits Funds for State Clean Energy Supply Programs

### Policy Description and Objective

#### Summary

Public benefits funds (PBFs), also known as system benefits charges (SBCs) and clean energy funds, are typically created by levying a small fee or surcharge on electricity rates paid by customers (i.e., for renewable energy, this fee is approximately 0.01 to 0.1 mills<sup>20</sup> per kilowatt-hour [kWh]) (DSIRE 2005). To date, PBFs have primarily been used to fund energy efficiency and low-income programs (see Section 4.2, *Public Benefits Funds for Energy Efficiency*). More recently, however, they have also been used to support clean energy supply (i.e., renewable energy and combined heat and power [CHP]).

PBFs were initially established during the 1990s in states undergoing electricity market restructuring. The goal was to assure continued support for renewable energy and energy efficiency programs in competitive markets and ensure that low-income populations had access to quality electrical service.<sup>21</sup> With respect to renewable energy, the concern was that in a competitive market, lower-cost generation would be favored over renewable energy. In response to this concern, PBFs were seen as a mechanism for continuing support for renewable energy and the benefits it provides in a competitive market situation.

CHP projects have been included in PBF-funded programs more recently due to their very high efficiency and environmental benefits. Although typically not considered a renewable energy technology, CHP can be characterized as a clean energy technology, a super-efficient generating technology, or an energy efficiency technology. As such, it has been addressed through both renewable and energy efficiency PBF-funded programs. States that have included CHP as an energy efficiency measure include New York and

Public benefit funds (PBFs) can increase clean energy supply and enhance state economic development and environmental improvement. A clean energy fund can be designed to address key market barriers including the upfront cost of equipment and to provide consumer and education outreach.

New Jersey (see *State Examples* section on page 5–26 for results of these CHP programs). This flexibility allows states to include CHP in PBF-funded programs where it makes most sense for that state, as a clean energy technology, an energy efficiency technology, or a super-efficient generating technology.

In 2005, 16 state renewable energy programs were expected to provide more than \$300 million in support of clean energy supply. PBFs (i.e., clean energy funds) provided much of this funding (see Figure 5.2.1), and according to one estimate, PBFs will generate more than \$4 billion for clean energy by 2017 (UCS 2004). In comparison, PBFs were expected to provide over \$1 billion in funding for energy efficiency programs in 2005. (For more information on PBFs for energy efficiency, see Section 4.2, *Public Benefits Funds for Energy Efficiency*.)

Because state clean energy funds for energy supply are a relatively recent policy innovation, it is too early to measure their success. While some states track clean energy fund metrics (e.g., the number of dollars invested, number of kilowatts [kW] installed, and number of installers trained), larger issues such as the impact of clean energy funds on the renewable energy market have not yet been systematically evaluated.

#### Objective

The key objective of creating state clean energy funds with PBFs is to accelerate the development of renewable energy and CHP within a state. The objectives underlying a push for more renewable energy include state economic development, environmental

<sup>20</sup> 1 mill = one-tenth of a cent.

<sup>21</sup> In California, these were initially called “stranded benefits” charges.

**Figure 5.2.1: Estimated 2005 Funding Levels for State Renewable Energy Programs**

	Est. 2005 Funding (\$ millions)	Additional Information
AZ	\$8.5 <sup>a</sup>	To be determined in 2005
CA	\$140	Through 2011
CT	\$20	Through 2012
DE	\$1.5 <sup>b</sup>	Undefined end date
IL	\$5	\$50 million over 10 years
MA	\$24	Undefined end date
ME	Voluntary	
MN	\$16	Undefined end date; tied to Xcel Nuclear Prairie Island plant operation
MT	\$2	2005
NJ	\$68	2005–2008, 37% of SBC funding
NY	\$9	\$67 million over 5 years from 2002 to 2006
OH	\$1.25	Through 2011
OR	\$11	Through 2009
PA	\$5.5	Through 2006
RI	\$3.0	Through 2012
WI	\$1.3	4.5% of SBC funding

Note: Values shown are annual amounts for renewable energy only and do not represent total SBCs.

- <sup>a</sup> In 2005 Arizona was estimated to generate \$8.5 million from PBFs and an additional \$11–11.5 million from a utility bill surcharge for renewable energy. Funds are given to utilities to comply with the Environmental Portfolio Standard (EPS) through green power purchases, development of renewable generation assets, and customer photovoltaic (PV) rebates. Arizona is currently modifying EPS rules, which could result in the elimination of PBFs for renewable energy, and instead create a utility bill surcharge to generate ~\$50 million per year.
- <sup>b</sup> Amount represents both renewable energy and energy efficiency programs.

Sources: DSIRE 2005, Navigant 2005.

improvement, and response to public demand. These objectives can be advanced, in part, by creating a clean energy fund that incorporates a variety of strategies, including lowering equipment costs, addressing market barriers, and providing consumer education and outreach.

## Benefits

PBF-based clean energy funds offer the following benefits:

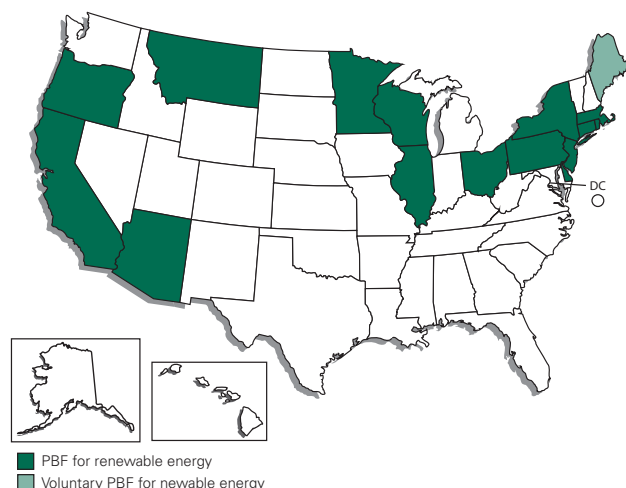
- *Provide a Cohesive Strategy “Under One Roof.”* Combining a range of clean energy programs and

funding within one organization allows for a cohesive strategy for addressing the range of clean energy market issues.

- *Tailored to a State’s Needs.* State clean energy funds provide flexibility in the types of incentives and programs that states can offer and can be customized to the state’s goals, natural resources, and industry presence (e.g., industries that are well established in a state, such as wind or biomass).
- *Support Long-Term Goals.* While policies such as renewable portfolio standards (RPS) are generally aimed at jump-starting markets for commercially ready technologies, clean energy funds have been designed to fund options with benefits that accrue over the long term. These longer-term programs, such as technology research, development, and demonstration programs, require a longer time frame (10 or more years) than is typically allowed by other approaches. In addition, these funds can be designed to improve the state economy by accelerating the development and deployment of technologies focused by in-state businesses. (See, for example, Section 5.1, *Renewable Portfolio Standards*.)
- *Complement Other Policies.* Because of their flexibility, state clean energy funds complement other state and federal policies, making those policies more effective. For example, PBFs are used by state energy programs to lower clean energy equipment costs by helping to ramp up volume, address key market barriers, and provide consumer education and outreach to increase the effectiveness and use of federal tax incentives, state RPS, and improved interconnection and net metering standards. In addition, PBFs can be used to support the successful implementation of other clean energy policies. For example, in California PBFs are used to pay the incremental cost for utility RPS compliance.

## States That Use PBFs for Clean Energy Supply

As of early 2005, 16 states had established clean energy funds to promote renewable energy: Arizona, California, Connecticut, Delaware, Illinois, Massachusetts, Maine (voluntary), Minnesota,

**Figure 5.2.2: Map of State Renewable Energy Funds**

Sources: DSIRE 2005, Navigant 2005.

Montana, New Jersey, New York, Ohio, Oregon, Pennsylvania, Rhode Island, and Wisconsin (UCS 2004, DSIRE 2005). (See Figures 5.2.1 and 5.2.2.)

## Designing and Implementing an Effective Clean Energy Fund

States consider a variety of key issues when designing PBFs directed at expanding the clean energy supply market. These issues include selecting an organizational structure to administer PBFs, protecting funding from being diverted for other uses, considering the importance of technology stages when designing PBF programs, and assessing the interaction of clean energy funds with state and federal policies.

### Participants

Many states encourage the participation of a variety of stakeholders, including trade associations, equipment manufacturers, utilities, project developers, and leading environmental groups. For example, the consensus between stakeholders in Massachusetts over a clean energy fund resulting from electric utility restructuring is described in the Massachusetts Renewable Energy Collaborative (1997).

## Administration

PBFs are typically established by state legislatures, and the bill(s) may provide varying levels of specificity for selecting an administrator for the PBF. Selecting the appropriate administrative organization for a clean energy fund is an important step. The role of the fund administrator is essential for the review of fund dispersal to ensure that each investment is valuable and represents the public interest. States have employed several organizational models for administering clean energy funds, including state energy offices, quasi-public agencies, public regulatory agencies, nonprofit organizations, and utilities. Many experts feel that no one model has proven more successful or effective than another.

States have chosen different models based on their goals and situations. Although utilities often manage PBFs used to support energy efficiency programs, utilities typically do not administer PBFs for renewable energy (a notable exception occurs in Arizona, where state renewable energy funds are managed by utilities). States have found that ensuring that a fund administrator has access to adequate staffing with appropriate expertise is more important than the administrative structure.

Examples of different administrative approaches include:

- *Massachusetts* chose the Massachusetts Technology Collaborative (MTC) to administer its clean energy funds. One of the main goals of the fund is to create a clean energy industry, and these goals are consistent with the MTC's charter, which is to foster high-tech industry "clusters" in Massachusetts (Commonwealth of Massachusetts 1997).
- *Connecticut* chose to administer its Clean Energy Fund through Connecticut Innovations Incorporated (CII), a quasi-public state agency charged with expanding Connecticut's entrepreneurial and technology economy. CII's experience in building a vibrant technology community in Connecticut fit well with the challenges of developing a clean energy industry and market.

## Approach

States use a variety of approaches, based on their specific objectives, for using clean energy funds to support renewable energy market development. Some of these approaches are described below.

- *Investment Model.* Under this approach, loans and equity investments are used to support clean energy companies and projects. In many cases, renewable energy businesses find it difficult to obtain financing since traditional financial markets may be hesitant to invest in clean energy. The rationale behind having the state provide initial investment is to bring the renewable energy businesses and the traditional financial markets to a point where investment in renewable energy businesses is sustainable under its own power. (An example is the Connecticut Clean Energy Fund [CEF 2005].)
- *Project Development Model.* This approach uses financial incentives, such as production incentives and grants and/or rebates, to directly subsidize clean energy project installation. These funds typically are put in place to help renewable energy be more competitive in the short-term by offsetting or lowering the initial capital cost or by offsetting the higher ongoing cost of generation. The rationale behind these incentives is that increased market adoption of renewable energy technologies will ultimately drive down the cost of these technologies to a point where, without incentives, they can compete with traditional generation. (Examples include California's Renewable Resource Trust Fund [CEC 2005] and New Jersey's Clean Energy Program [NJCEP 2005].)
- *Industry Development Model.* With this approach, states use business development grants, marketing support programs, research and development grants, resource assessments, technical assistance, consumer education, and demonstration projects to support clean energy projects. The rationale behind these programs is that they will facilitate market transformation by building consumer awareness and demand, supporting the development of a qualified service infrastructure, and investing in technological advancement. (Examples

include Wisconsin's Public Benefit Fund [State of Wisconsin 2005] and New Jersey's Clean Energy Program [NJCEP 2005].)

## Funding

Leading states have designed their clean energy funds to be generated from a set rate in the electricity tariff, thereby providing consistency in funding levels from year to year. The ability to carry forward excess annual contributions to a clean energy fund can be important, especially during the fund's initial years. This approach helps states obtain consistent funding levels and protect against the diversion of funding to other state needs (e.g., to meet general budget shortfalls). If funding is diverted from the PBF to another use, such as to the state general fund, it significantly harms the ability of the PBF program to be successful, particularly during the initial years of the program.

## Technology Stages

State clean energy funds include a portfolio of program options to support both emerging and commercially competitive technologies. Determining both the stage of technology development and the kind of incentives needed to support each technology are important steps in designing a clean energy fund program.

- For *emerging technologies*, clean energy funds can be used to address a variety of technical, regulatory, and market challenges. For example, MTC, administrator of the Massachusetts Renewable Energy Trust (MRET), is exploring offshore wind power, which to date has yet to be established in the United States. In anticipation of stakeholder concerns for potential wildlife, safety, and aesthetic impacts, MTC has used clean energy funds to bring stakeholders together in a collaborative process to discuss these issues. This approach ensures that stakeholder concerns and issues are addressed early in the process to help obtain support for later implementation.
- For renewable energy technologies that are *technologically proven but relatively expensive* compared

to fossil fuel energy generation, PBF funds can provide economic incentives to help bridge the gap between what the market is willing to bear and current costs. Examples of widely used incentives are buy-downs (rebates) for photovoltaic (PV), small wind systems, and fuel cells. For example, CII, administrator of the Connecticut Clean Energy Fund (CCEF), uses commercial buy-down programs for fuel cells and solar PV to support residential, commercial, and industrial uses of these technologies.

- Clean energy funds can also be used to develop programs that provide noneconomic incentives, which can be critical to *clean energy market development*. For example, while tax incentives and buy-down money may be available to support PV and fuel cells, additional funding might be needed to stimulate the development of a qualified installer network and other key industry infrastructure crucial to the success of the technology. For example, through its Renewable Energy Economic Development (REED) Program, New Jersey provides incentives to renewable energy companies to expand their businesses (e.g., helping to support infrastructure development) (NJCEP 2004).
- For *mature technologies* that are already cost-competitive (e.g., wind power, CHP, and biomass power), states can use clean energy funds to address other market barriers. For example, in 2003, the MTC formed the Massachusetts Green Power Partnership to use PBF funds to add economic certainty to Renewable Energy Certificate (REC) markets. MTC is currently entering into contracts of up to 10 years for RECs from RPS-eligible projects, providing them with bankable, long-term revenue from an investment-grade entity.
- *Increased use of CHP* can also be fostered with funding from state clean energy funds. In 2004, the New Jersey Board of Public Utilities' Office of Clean Energy created a CHP incentive program and provided \$5 million for CHP projects. The California Public Utilities Commission (CPUC)

issued a decision in 2001 requiring the investor-owned utilities to provide self-generation incentives, which include CHP.<sup>22</sup> In New York, the New York State Energy Research and Development Authority (NYSERDA) manages the Distributed Generation (DG)/CHP Program, which offers incentives for CHP projects funded by PBFs. From 2000 to 2004, NYSERDA awarded \$64 million under the program, with the goal of awarding \$15 million/year. (Note that some of this funding is provided from PBFs focused on energy efficiency.)

## Interaction with State and Federal Policies

The incentives and programs implemented by clean energy funds interact with state and federal policies in ways that may be important to the designers of a clean energy fund. For example:

- States have found that programs designed to support the overall energy and environmental goals of the state and work in concert with other state renewable energy initiatives, such as RPS and tax credits, are most effective.
- Programs are most successful when leveraging other funding sources without activating "double-dipping" clauses. Incentives for wind projects that also allow developers to continue to take advantage of federal incentives include the production tax credit (PTC) and five-year accelerated depreciation (Wiser et al. 2002a).
- States have found that the success of clean energy fund incentives can also depend on the existence of other state clean energy policies. For example, in some states, net metering eligibility and interconnection standards may need to be established or modified by the state Public Utility Commission (PUC) to encourage small-scale distributed generation. (For more information on net metering and interconnection, see Section 5.4, *Interconnection Standards*.)

<sup>22</sup> CPUC incentive funding is \$125 million a year, most of which goes to PV installations. For microturbines or internal combustion (IC) engines, the incentive funding does not require CHP.



## State Examples

### California

The California Energy Commission (CEC), in coordination with the CPUC, manages clean energy funding in California. The California PBF, established in 1998, generates more than \$135 million per year for clean energy. The program has four primary components:

- *Existing Renewable Resources*, which supports market competition among in-state existing renewable electricity facilities through varying incentives. Eligible existing renewable energy facilities are primarily supported through a cents/kWh payment.
- *New Renewable Resources*, which encourages new renewable electricity generation projects through fixed production incentives. Incentives are provided on a cents/kWh payment.
- *Emerging Renewable Resources*, which stimulates renewable energy and CHP<sup>23</sup> market growth by providing rebates to purchasers of onsite clean energy generation while encouraging market expansion (primarily incentives for capacity installed, on a dollar-per-watt basis).
- *Consumer Education*, which informs the public about the benefits and availability of renewable energy technologies through dissemination of general information and project descriptions.

#### Web sites:

<http://www.energy.ca.gov/renewables/>

<http://www.cpuc.ca.gov/static/industry/electric/distributed+generation/>

### Connecticut

The CCEF is managed by a quasi-government investment organization called CII. CCEF receives about \$20 million annually from PBFs. Since its inception in 1998 through September 2004, CCEF has invested a total of \$52.8 million in renewable energy development. The program has three components:

- *Installed Capacity Program*, which supports long-term contracts for clean energy projects and

incentive programs for host supply or onsite installations of clean DG projects.

- *Technology Demonstration Program*, which supports the demonstration of new clean energy technologies and innovative applications, while also providing infrastructure support to the emerging clean energy industry.
- *Public Awareness and Education Programs*, which support local clean energy campaigns to influence the buying behavior of electricity customers so that they voluntarily support clean energy.

#### Web site:

<http://www.ctcleanenergy.com/>

### Massachusetts

MRET is managed by MTC, an independent economic development agency focused on expanding the renewable energy sector and Massachusetts' innovation economy. The State Division of Energy Resources provides oversight and planning assistance. A total of \$150 million over a five-year period is earmarked for renewable energy. MTC's approach is to first identify barriers to renewable energy growth in Massachusetts, then leverage additional funds from other sources, including private companies and nonprofits. MTC's goals include maximizing public benefit by creating new high-tech jobs and producing clean energy. The MRET includes four program areas:

- Clean Energy Program
- Green Buildings and Infrastructure Program
- Industry Support Program
- Policy Unit

#### Web site:

<http://www.mtpc.org/renewableenergy/index.htm>

### New Jersey

New Jersey's clean energy initiative, administered by the New Jersey Board of Public Utilities (NJBPU), provides information and financial incentives and creates enabling regulations designed to help New Jersey residents, businesses, and communities reduce their energy use, lower costs, and protect the environment.

<sup>23</sup> Limited to fuel cell CHP systems fueled with biogas.

New Jersey's Clean Energy Program has three components: residential programs, commercial and industrial programs, and renewable energy programs. CHP is funded as an efficiency measure through the commercial and industrial programs.

On July 27, 2004, the NJBPU approved a funding level of \$5 million for the Office of Clean Energy's CHP Program. The program's goals are to increase energy efficiency, reduce overall system peak demand, and encourage the use of emerging technologies. The 2004 CHP Program funded a total of 23 projects that will generate in excess of 8 megawatts (MW) of power with system efficiencies of 60% or greater.

Furthermore, on December 22, 2004, the NJBPU established the Clean Energy Program (CEP) funding level at \$745 million for the years 2005–2008. Of that total, renewable energy programs will receive a total of \$273 million, making New Jersey home of one of the most aggressive renewable energy programs in the country. In 2004, the Customer Onsite Renewable Energy Program provided \$12 million in rebates for 280 PV projects, adding more than 2 MW of new capacity.

In addition, New Jersey takes a comprehensive approach to ensure that all the different programs and policies intended to support clean energy are in place and work together (e.g., RPS with solar set-aside, net metering, interconnection standards).

**Web sites:**

<http://www.bpu.state.nj.us>

<http://www.njcleanenergy.com/html/Combined/combined.html>

<http://www.njcep.com/srec>

## New York

NYSERDA, a public benefit corporation created in 1975 by the New York State Legislature, administers the New York Energy \$mart program. This program is designed to support certain public benefit programs during the transition to a more competitive electricity market. Some 2,700 projects in 40 programs are funded by a charge on the electricity transmitted and distributed by the state's investor-owned utilities. The New York Energy \$mart program provides

energy efficiency services, research and development, and environmental protection activities.

Among other things, the Energy \$mart program administers the New York Energy \$mart Loan Fund program, which provides an interest rate reduction of up to 4% (400 basis points) off a participating lender's normal loan interest rate for a term up to 10 years on loans for certain energy efficiency improvements and/or renewable technologies.

In addition, since 2001, NYSERDA has administered other programs for energy efficiency and renewable energy. These include the DG/CHP Program, which has approved 83 DG/CHP systems for funding, representing 90 MW of peak demand reduction.

**Web site:**

<http://www.nyserda.org>

## Ohio

Ohio's 1999 electric restructuring law created the Energy Loan Fund (ELF) and Universal Service Board. The ELF will collect \$100 million over 10 years to provide low-interest loans or loan guarantees for energy efficiency improvements undertaken at residential, government, educational, small commercial, small industrial, and agricultural facilities. Renewable energy projects and public education efforts are also eligible for loans through ELF. The Ohio Department of Development's Office of Energy Efficiency (OEE) operates this fund. CHP systems up to 25 MW for commercial, institutional, and industrial applications are eligible for grants and loans under this program.

**Web site:**

[http://www.odod.state.oh.us/cdd/oee/energy\\_loan\\_fund.htm](http://www.odod.state.oh.us/cdd/oee/energy_loan_fund.htm)

## What States Can Do

### Action Steps for States

States have chosen from a variety of approaches and eligible technologies in developing their clean energy funds. The best practices common among these states have been explored above. This section describes suggested action steps states can take to help ensure these best practices are implemented.

It is important for states that want to include CHP in their clean energy portfolios to comprehensively promote its benefits. For example, identifying CHP as both a clean source of energy and a source of significant energy savings and efficiency provides additional flexibility in including CHP in PBF programs and communicating the program to the public.

### ***States That Have an Existing Clean Energy Fund***

A top priority after establishing a clean energy fund is to identify and mitigate issues that might adversely affect the program's success. Demonstrating that the desired benefits are being achieved is essential for continued funding and support for the program. States can:

- Develop and monitor progress against clear targets for renewable energy and CHP development and related goals, such as green power participation rates, infrastructure development (e.g., MW of new capacity), and consumer awareness. Often, these targets are related to state goals.
- If necessary, shift fund priorities and develop new or modified programs in response to changes in markets or technologies (Wiser et al. 2002b).

### ***States That Do Not Have an Existing Clean Energy Fund***

Broad political and public support is a prerequisite to establishing a clean energy fund. After establishing general support for goals, a key step is to facilitate discussion and negotiation among key stakeholders toward developing an appropriate clean energy fund design.

- Ascertain the level of general interest and support for renewable energy and CHP in the state. If awareness is low, consider performing an analysis followed by an educational campaign to raise awareness of the environmental and economic benefits of accelerating the development of clean energy supply. For example, SmartPower has been working in numerous states to raise awareness of clean energy through public education campaigns (SmartPower 2005).

- Establish a working group of interested stakeholders to consider design issues and develop recommendations toward a clean energy fund. Work with the state legislature and PUC, as necessary, to develop model language and address ratemaking issues for raising, distributing, and administering the fund. Develop draft legislation for consideration by the state legislature, if legislation is required to implement a clean energy fund. In addition, if necessary, work with the PUC to establish the ratemaking process for creating the SBC.

### ***Related Actions***

- Consider additional policies or regulations that will help make a clean energy fund successful. For example, consider net metering and interconnection standards that are favorable to renewable energy and CHP development. For more information on these policies, see Section 5.4, *Interconnection Standards*.
- Publicize success stories and goals that have been reached. Make sure that state officials, office holders, and the public are aware that the clean energy fund is working and achieving the desired results.
- Develop a stakeholder communication process. A majority of clean energy funds were established through legislation after a robust stakeholder process that included input from utilities, PUCs, energy users, equipment manufacturers, project developers, state energy offices, and clean energy advocates. A stakeholder process is crucial to ensuring that market and project realities are considered in the design process.

## **On The Horizon**

The *Guide to Action* focuses on established PBF policies that have proven to be successful in various states. Table 5.2.1 provides a brief description of emerging policies and innovative approaches, along with sources of additional information about these policies. To learn about additional policies on the horizon related to the other energy supply policies, see Appendix C, *Clean Energy Supply: Technologies, Markets, and Programs*.



**Table 5.2.1: Emerging Policies and Innovative Approaches**

Policy	Description	For More Information
Contractor and Equipment Certification	Some states require equipment and contractor certification for renewable energy installations that receive buy-down or state financial incentives. These standards ensure that high-quality products and services are provided to customers.	<p>The North American Board of Certified Energy Practitioners (NABCEP) works with renewable energy and energy efficiency industries, professionals, and stakeholders to develop and implement quality credentialing and certification programs for practitioners. <a href="http://www.nabcep.org">http://www.nabcep.org</a></p> <p>In New York, NYSEERDA's PV or Solar Electric Incentive Program provides cash incentives for the installation of small PV or solar-electric systems. The cash incentives are only available for PV systems purchased through an eligible installer. <a href="http://www.powernaturally.org/Programs/Solar/incentives.asp?i=1">http://www.powernaturally.org/Programs/Solar/incentives.asp?i=1</a></p>
Standard REC Trading/Tracking Systems	A few state renewable energy programs currently have Web-based tracking systems for DG and/or assigning RECs based on this generation. These systems enable DG systems to participate in REC markets.	New Jersey established a separate REC trading system for solar PV. <a href="http://www.njcep.com/srec/">http://www.njcep.com/srec/</a>
Mandated Long-Term Contracts for Renewables	This policy allows utilities in deregulated markets to sign long-term contracts with renewable energy generators. This would provide generators with the long-term certainty they need to get their projects financed.	<p>The Colorado referendum that created the RPS requires a 20-year purchase for projects eligible to satisfy the RPS. <a href="http://www.dora.state.co.us/puc/rulemaking/Amendment37.htm">http://www.dora.state.co.us/puc/rulemaking/Amendment37.htm</a></p> <p>A legislative act in Connecticut requires distribution companies to sign long-term Power Purchase Agreements for no less than 10 years for clean energy at a wholesale market price plus up to \$0.055 per kWh for the REC. <a href="http://www.ctcleanenergy.com/investment/MarketSupplyInitiative.html">http://www.ctcleanenergy.com/investment/MarketSupplyInitiative.html</a></p>
Integrating PUC goals into PBF Program Design (i.e., "Cross-Walking")	This policy encourages the use of PBFs not only to support energy efficiency and renewable energy but also to help PUCs and utilities reach their goals, such as increased reliability, congestion relief, and permanent peak reduction.	<p>New England Demand Response Initiative. <a href="http://nedri.raabassociates.org/index.asp">http://nedri.raabassociates.org/index.asp</a></p> <p>In Massachusetts, annual peak demand reductions from energy efficiency and PBF-funded load management ranged from 98 to 135 MW in 1998, 1999, and 2000. Cumulative reductions from these programs reached 700 MW (7.2% of peak) as of 2000. <a href="http://eetd.lbl.gov/EA/EMP/reports/PUB5482.pdf">http://eetd.lbl.gov/EA/EMP/reports/PUB5482.pdf</a></p>

*Source: Compiled by EPA based on multiple sources.*

## Information Resources

### Federal Resources

Title/Description	URL Address
<b>The U.S. Environmental Protection Agency's (EPA's) CHP Partnership</b> is a voluntary program that seeks to reduce the environmental impact of energy generation by promoting the use of CHP. The Partnership helps states identify opportunities to encourage energy efficiency through CHP, and can provide additional assistance, including information on CHP incentives and program design.	<a href="http://www.epa.gov/chp/">http://www.epa.gov/chp/</a>
<b>The EPA Green Power Partnership</b> is a voluntary Partnership between EPA and organizations that are interested in buying green power. Through this program, the EPA supports organizations that are buying or planning to buy green power.	<a href="http://www.epa.gov/greenpower/">http://www.epa.gov/greenpower/</a>

### General Articles and Resources About Clean Energy Funds

Title/Description	URL Address
<b>Case Studies of State Support for Renewable Energy.</b> This site contains a set of articles pertaining to different aspects of clean energy funds authored by staff at Lawrence Berkeley National Laboratories (LBNL).	<a href="http://eetd.lbl.gov/ea/EMS/cases/">http://eetd.lbl.gov/ea/EMS/cases/</a>
<b>Clean Energy States Alliance (CESA).</b> Twelve states have established funds to promote renewable energy and clean energy technologies. CESA is a nonprofit organization that provides information and technical services to these funds and works with them to build and expand clean energy markets in the United States. The CESA Web site includes links to all state clean energy funds and related state agencies.	<a href="http://www.cleanenergystates.org/">http://www.cleanenergystates.org/</a>
<b>The Database of State Incentives for Renewable Energy (DSIRE).</b> This database is a comprehensive source of information on state, local, utility, and selected federal incentives that promote renewable energy.	<a href="http://www.dsireusa.org/">http://www.dsireusa.org/</a>
<b>SmartPower Web Site: Marketing Resources.</b> SmartPower has been working in numerous states to raise the awareness of clean energy through public education campaigns.	<a href="http://www.smartpower.org/clean_energy_marketing.htm">http://www.smartpower.org/ clean_energy_marketing.htm</a>
<b>Union of Concerned Scientists.</b> This Web site contains articles and fact sheets by staff at the Union of Concerned Scientists on clean energy funds and PBFs for renewable energy. New articles and other information are added to the Web site continually.	<a href="http://www.ucsusa.org/clean_energy/">http://www.ucsusa.org/clean_energy/</a>

## References

Title/Description	URL Address
CCEF. 2005. Quick Facts about CCEF. CCEF Web site. Accessed July 2005.	<a href="http://www.ctcleanenergy.com/about/quick_facts.html">http://www.ctcleanenergy.com/about/quick_facts.html</a>
CEC. 2005. Renewable Energy Program. CEC Web site. Accessed July 2005.	<a href="http://www.energy.ca.gov/renewables/overview.html">http://www.energy.ca.gov/renewables/overview.html</a>
Commonwealth of Massachusetts. 1997. Chapter 164 of the Acts of 1997. An act regarding restructuring the electric utility industry in the Commonwealth, regulating the provision of electricity and other services, and promoting enhanced consumer protections therein. Approved November 25.	<a href="http://www.mass.gov/legis/laws/seslaw97/sl970164.htm">http://www.mass.gov/legis/laws/seslaw97/sl970164.htm</a>
DSIRE. 2005. DSIRE Web site. Contains information on state PBFs.	<a href="http://www.dsireusa.org/index.cfm?&amp;CurrentPageID=2">http://www.dsireusa.org/index.cfm?&amp;CurrentPageID=2</a>
Massachusetts Renewable Energy Collaborative. 1997. Consensus Report to the Legislature on the Proposed Renewable Energy Fund. July 1.	<a href="http://www.raabassociates.org/Articles/Renewable_Fund_Final.doc">http://www.raabassociates.org/Articles/Renewable_Fund_Final.doc</a>
Navigant. 2005. Company intelligence. Navigant Consulting Inc. Also see Katofsky, R. and L. Frantzis. 2005. Financing renewables in competitive electricity markets. Power Engineering. March 1.	<a href="http://www.navigantconsulting.com/A559B1/navigantnew.nsf/vGNCNTByDocKey/PPA91045514813/\$FILE/Financing%20Renewables%20in%20Competitive%20Electricity%20Markets_Power%20Engineering_March%202005.pdf">http://www.navigantconsulting.com/A559B1/navigantnew.nsf/vGNCNTByDocKey/PPA91045514813/\$FILE/Financing%20Renewables%20in%20Competitive%20Electricity%20Markets_Power%20Engineering_March%202005.pdf</a>
NJCEP. 2004. New Jersey Clean Energy Program: Incentives, Regulation, and Services Designed to Transform Energy Markets in New Jersey. October 4. 9th National Green Power Marketing Conference, Scott Hunter, NJBPU, Office of Clean Energy.	<a href="http://www.eere.energy.gov/greenpower/conference/9gpmc04/hunter.pdf">http://www.eere.energy.gov/greenpower/conference/9gpmc04/hunter.pdf</a>
NJCEP. 2005. Financial Incentives to "Get with the Program." NJCEP Web site. Accessed July 2005.	<a href="http://www.njcep.com/html/2_incent.html">http://www.njcep.com/html/2_incent.html</a>
SmartPower. 2005. SmartPower Web Site: Marketing Resources. SmartPower has been working in numerous states to raise the awareness of clean energy through public education campaigns.	<a href="http://www.smartpower.org/clean_energy_marketing.htm">http://www.smartpower.org/clean_energy_marketing.htm</a>
State of Wisconsin. 2005. Focus on Energy. Renewable Energy. Wisconsin's Focus on Energy Web site. Accessed July 2005.	<a href="http://www.focusonenergy.com/">http://www.focusonenergy.com/</a>
UCS. 2004. Table of State Renewable Energy Funds. Union of Concerned Scientists.	<a href="http://www.ucsusa.org/clean_energy/clean_energy_policies/clean-energy-policies-and-proposals.html">http://www.ucsusa.org/clean_energy/clean_energy_policies/clean-energy-policies-and-proposals.html</a> (PDF Link: State Renewable Energy Funds)
Wiser, R, M. Bolinger, and T. Gagliano. 2002a. Analyzing the Interaction between State Tax Incentives and the Federal Production Tax Credit for Wind Power. LBNL-51465. Environmental Energy Technologies Division, LBNL, Department of Energy, Berkeley, CA. September.	<a href="http://eetd.lbl.gov/ea/EMS/reports/51465.pdf">http://eetd.lbl.gov/ea/EMS/reports/51465.pdf</a>
Wiser, R., M. Bolinger, L. Milford, K. Porter, and R. Clark. 2002b. Innovation, Renewable Energy, and State Investment: Case Studies of Leading Clean Energy Funds. LBNL-51493. Environmental Energy Technologies Division, LBNL and The Clean Energy Group. September.	<a href="http://eetd.lbl.gov/ea/EMS/reports/51493.pdf">http://eetd.lbl.gov/ea/EMS/reports/51493.pdf</a>